UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

LEIGHTON TECHNOLOGIES LLC,

Plaintiff,

vs.

OBERTHUR CARD SYSTEMS, S.A. and OBERTHUR CARD SYSTEMS OF AMERICA CORPORATION,

Defendants.

OBERTHUR CARD SYSTEMS, S.A. and OBERTHUR CARD SYSTEMS OF AMERICA CORPORATION,

Counterclaim Plaintiffs,

vs.

LEIGHTON TECHNOLOGIES LLC, GENERAL PATENT CORPORATION INTERNATIONAL, GENERAL PATENT CORPORATION, and IP HOLDINGS LLC,

Counterclaim Defendants.

Case No: 04 CV 02496 (CM) (LMS)

DECLARATION OF DR. DAVID O. KAZMER SUBMITTED IN SUPPORT OF DEFENDANTS' MOTION FOR SUMMARY JUDGMENT OF NON-INFRINGEMENT

CORRECTED VERSION

Hon. Coleen McMahon

Magistrate Judge Lisa M. Smith

I, Dr. David O. Kazmer, hereby declare as follows:

Background

1. I am currently a tenured Full Professor in the Department of Plastics Engineering at the University of Massachusetts-Lowell. My background and qualifications are summarized in my curriculum vitae, which I attach as Exhibit A hereto. As a result of my academic experience and industrial experience, which I briefly summarize below, I am familiar with the design and manufacture of laminated smart cards.

2. I joined the faculty of the University of Massachusetts-Amherst in 1995 as an Assistant Professor in the Department of Mechanical and Industrial Engineering. In 2001, I took a leave of absence to be Director of Research & Development for Dynisco HotRunners ("Dynisco"), a supplier of plastics molding machine auxiliaries.

3. Prior to my academic appointment, I was a practicing engineer in industry. During 1991 and 1992, I was a Design and Process Development Engineer at GE Plastics. During 1990 and 1991, I was a Mechanical Engineer at GE Research and Development. During 1988 and 1989, I was an Application Engineer at GE Plastics. Concurrently with these positions, I completed a bachelor's degree in Mechanical Engineering at Cornell University (December, 1989) and master's degree in Mechanical Engineering at Rensselaer Polytechnic Institute (May, 1991). My work at General Electric focused primarily on the design and manufacture of engineered plastic products. Accordingly, I have personally worked on the design and manufacture of plastic products including electrical connectors, snap fit assemblies, and many other components.

4. Subsequent to my work at General Electric, I received a doctoral degree in June 1995 from the Mechanical Engineering Design Division at Stanford University. My doctoral research led to a method for dynamic control of melt flow at multiple locations in an injection mold and led to a

commercial product, Dynamic Feed. I have supported Dynisco's development of the commercial Dynamic Feed product, which enables the dynamic control of flow and pressure of plastic at multiple points in an injection mold. I am the inventor of multiple U.S. Patents, including Nos. 5,556,582, 6,254,377, 6,287,107, 6,309,208, 4,343,921, 6,343,922 6,361,300 and 6,436,320. The technology described in these patents has been used for precisely manufacturing many applications, including electrical connectors, ink jet cartridges, and other products.

5. As a faculty member, my teaching and research focuses on plastic product design and plastics manufacturing process development. Currently, I am teaching undergraduate and graduate courses in product design, mold engineering design, and process analysis, instrumentation, and control. An active researcher, I have generated over two million dollars of research funding in the last seven years. I have also authored more than two hundred papers and taught many courses and seminars on plastic product and process design.

6. I am the past chair of the American Society of Mechanical Engineering's Design for Manufacturing Technical Committee, the focus of which is to improve the performance and cost aspects of plastic products and plastics manufacturing processes. I am an Associate Editor for the Journal of Polymer Plastics Technology and Engineering as well as the Journal of Advances in Polymer Technology. I also served as an Associate Editor for Journal of Mechanical Design from 2003 to 2006. The quality of my work has been recognized by Career and Young Investigator Awards from the National Science Foundation and the Office of Naval Research, the College of Engineering Outstanding Junior Faculty Award, American Society of Mechanical Engineers Teaching Award, and several national design awards. I am a member of the American Society of Mechanical Engineers, the Institute of Electrical and Electronics Engineers, the International Polymer Processing Society, and the Society of Plastics Engineers, among others.

7. I have been asked by defendants Oberthur Card Systems, S.A. and Oberthur Card Systems of America Corporation (collectively "Oberthur") to serve as a technical expert in the above-captioned matter. I plan to testify at trial as a technical expert, and submit expert reports on certain technical issues. I am being compensated for my time spent working on this case at my normal hourly rate of $300 per hour.

8. For the purposes of Oberthur's motion for summary judgment of non-infringement, I have been asked by Oberthur to analyze the infringement contentions set forth by Leighton Technologies, as provided in the report of its technical expert Dr. David Everett. In his expert report, submitted on November 21, 2006, Dr. Everett explained why he believes Oberthur's accused products infringe the asserted claims in United States Patent Nos. 5,817,207 (the "'207 patent") and No. 6,214,155 (the "'155 patent") (collectively, the "Leighton patents"). I understand that plaintiff Leighton Technologies LLC ("Leighton Tech") alleges that Obethur infringes claims 1, 4, 6-7 and 16 of the '207 patent, and claims 1, 4, 6-7 and 15 of the '155 patent (collectively, the "asserted claims").

9. In summary, it is my opinion that the contactless cards made by Oberthur do not infringe because they do not contain at least two limitations of the asserted claims. The Leighton Patent claims require that an electronic element be positioned (i) "directly between" two plastic core sheets, (2) in the absence of a "non-electronic carrier," which will protect the electronic element during lamination. With respect to the non-electronic carrier limitation, Oberthur's accused cards do not satisfy this requirement because they contain a recess that protects the electronic element in Oberthur's cards – a chip and antenna. Oberthur's cards also do not infringe because, as a result of the recess, the electronic element in them does not directly contact two plastic core sheets.

The Leighton Patents

10. "The Leighton patents describe processes for making smart cards, and claim the use of a 'highly coordinated' lamination process involving heat, cooling and the application or pressure to encapsulate an electronic component that is essential to signal transmission." *Leighton*, 358 F. Supp. 2d at 364. "The Patents allegedly are an improvement over the prior art by eliminating the need to create a protective barrier around the embedded electronic element, thereby uncomplicating the manufacturing process." *Id.*

11. All of the asserted claims in the Leighton patents contain the following limitations: "positioning said at least one electronic element in the absence of a non-electronic carrier directly between said first and second plastic core sheets." (Declaration of Kevin P.B. Johnson, Ex. 1, claim 1 (emphasis added).) The Court construed the term "non-electronic carrier" to mean "a device that holds an electronic element to protect it from physical damage during lamination, where the device is not part of a circuit that utilizes a semiconductor device." *Leighton*, 358 F. Supp. 2d at 376. This Court construed the term "directly" to mean "in immediate physical contact." *Leighton*, 358 F. Supp. 2d at 377.

12. In the *Markman* opinion, this Court likened the "core" formed by the core sheets and electronic element "to a sandwich, in which the plastic sheets were the pieces of bread and the electronic element was the filing." *Leighton*, 358 F. Supp. 2d at 361. The claims in the Leighton patents require that "there is nothing - no container, no recess and no physical buffer of any sort - that protects the embedded electronic element during lamination." *Id.* at 369.

13. Six claims of the Leighton Patents specifically state that "one electronic element is a [chip] and an associated antenna." Specifically, dependent claims 13, 14, and 15 in the '207 patent state as follows (Johnson Ex. 1, emphasis added.):

> 13. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein *said at least one electronic element is a micro-chip and an associated wire antenna*.
>
> 14. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein *said at least one electronic element is a micro-chip and an associated circuit board antenna*.
>
> 15. The process for incorporating at least one electronic element in the manufacture of a plastic card as recited in claim 1, wherein *said at least one electronic element is a read/write integrated chip and an associated antenna*.

None of the other claims of either Leighton patent defines the "one electronic element" in any other way.

14. Similarly, the specification of the Leighton Patents further explains that the electronic element "may take a wide variety of forms and perform a wide variety of functions," and it then references several figures that depict specific forms the electronic element may take:

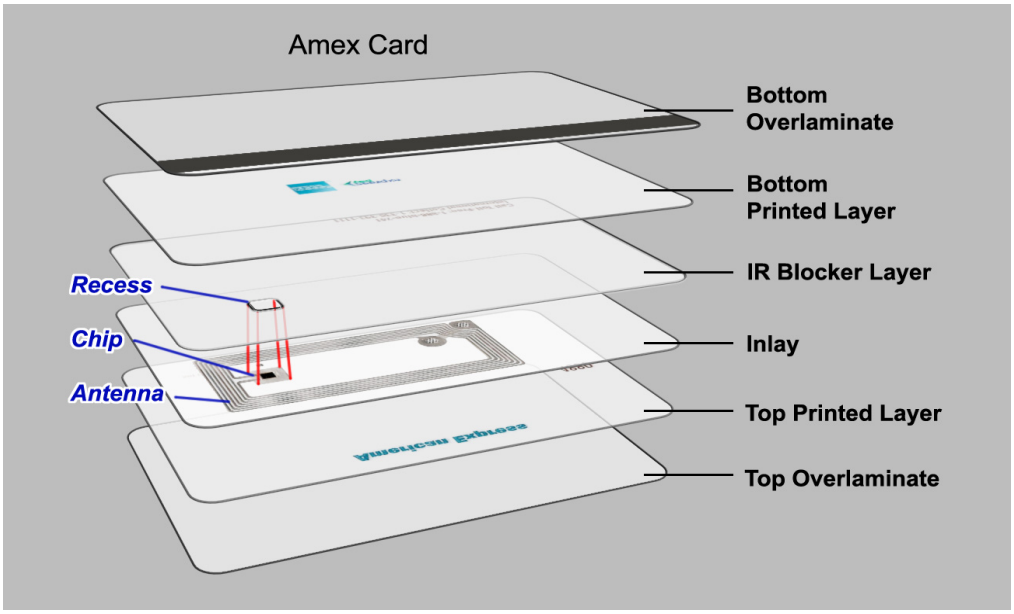
> As shown in Fig. 3A-3C respectively, electronic element 20, 20', 20" may be provided by a micro-chip 22 including a wire antenna 24 connected thereto, a micro-chip 22' and a circuit board antenna 24', a read/write micro-chip 22" and a wire coil antenna 24", or any other suitable electronic element.

Oberthur's Cards Do Not Literally Infringe The Asserted Claims

Oberthur's Card Structure

15. I understand that all parties have agreed to a Stipulation regarding the structure and manufacturing processes used to make the Oberthur cards that are accused of infringement. (Johnson Ex. 27.) I also understand that Oberthur currently manufactures two types of contactless credit cards – (i) cards for American Express (the "Amex cards"), and (ii) cards for other credit card customers, referred to internally by Oberthur as project "Xenon" (the "Xenon cards"). The Amex and Xenon cards share at least one common structural feature – they both contain a recess in the plastic layer above the electronic element, a chip and associated antenna.

16. The Structure of the Amex Cards: I understand that the Amex cards contain six plastic layers. As set forth in the parties' stipulation, from top to bottom, the layers of the Amex card are: a top overlaminate layer; a top printed layer; an inlay layer with an embedded antenna and a chip module that extends downward; an IR blocker layer; a bottom printed layer; and a bottom overlaminate layer. (Johnson Ex. 27.) This structure is set forth in the figure below, and is also evident from examination of the unlaminated Amex cards attached as Exhibit 13 to the Johnson Declaration:



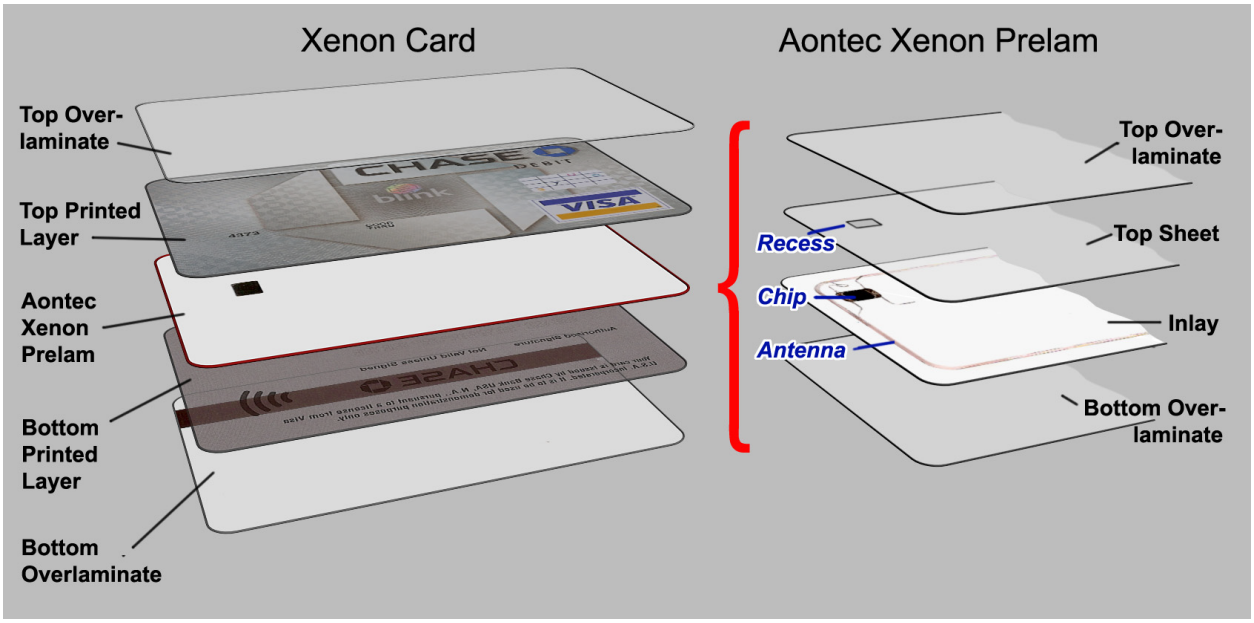
Before lamination, Oberthur punches a hole in the IR blocker layer. The hole is positioned so that it is directly below the chip in the inlay layer. As shown by the figure above and the unlaminated Amex cards, the top of the chip does not touch the IR blocker before lamination .

17. The Structure of the Xenon Cards: The Xenon cards contain a prelam layer that contains the electronic element. Oberthur has used four different types of prelams in the Xenon cards, and all of them contain a hole in the plastic sheet that is directly above the chip. Starting at the top of the prelam and proceeding to the bottom, the prelam contains at least four layers: a top overlaminate

layer; a top layer having a recess that is positioned directly above the chip module; an inlay layer with an antenna and a chip module that extends upwards; and a bottom overlaminate layer. The structure of the Xenon prelams is set forth in the parties' stipulation regarding accused products, and is evident from examination of the unlaminated prelams attached as Exhibits 19 and 20 to the Johnson Declaration.

18. Like the IR blocker layer in the Amex card, the top layer in the prelam contains a hole that is located directly above the chip. As shown by the unlaminated prelams attached to the Johnson Declaration, before lamination the top of the chip does not contact the top overlaminate layer.

19. I understand that two companies supply Oberthur with laminated prelams, Smartrac and Aontec. After receiving laminated prelams from Aontec and Smartrac, Oberthur assembles and laminates the Xenon cards. From top to bottom, the Xenon cards consist of five plastic layers: a top overlaminate layer; a top printed layer; the prelam; a bottom printed layer; and a bottom overlaminate layer. This structure is set forth in the figure below, and is also evident from examination of the unlaminated Xenon cards attached as Exhibit 21 to the Johnson Declaration:



Oberthur's Cards Do Not Infringe Because They Contain A Non-Electronic Carrier

Oberthur's Cards Have One Electronic Element – a Chip and Associated Antenna

20. It is my opinion that that the Amex and Xenon cards contain a single "electronic element" – the chip and antenna assembly. The claims of the Leighton Patents confirm that a micro-chip and associated antenna is "one electronic element." For example, claim 11 in the '207 patents states that "at least one electronic element is a micro-chip and antenna." Similarly, five other claims in the Leighton Patents also state that "one electronic element" is a chip and associated antenna.

21. The specification of the Leighton Patents confirms the definition of "one electronic element" that is set forth in the claims of the Leighton Patents. As discussed above, the specification discloses three chip and antenna assemblies that each constitute "one electronic element."

22. The claims of the Leighton Patents cover cards containing more than one electronic element, and I understand that Leighton Tech may rely upon this fact to argue that the chip and antenna in Oberthur's cards must be separate electronic elements. However, a card containing multiple electronic elements would be significantly different from a card that contains only one electronic element, such as in Oberthur's cards. Hybrid cards have two chips, one that communicates using a contactless interface such as an antenna, and another that communicates using a contact interface. These chips are not connected and are therefore different electronic elements, which refutes the notion that a chip and an antenna (like that present in Oberthur's accused cards) must be one electronic element.

The Recess In Oberthur's Cards Is a Non-Electronic Carrier That Holds and Protects the Electronic Element During Lamination

23. This Court construed the term "non-electronic carrier" to mean a "device that holds an electronic element to protect it from physical damage during lamination, where the device is not part of a circuit that utilizes a semiconductor device." It is my opinion that the recess in the Amex and

Xenon cards is a non-electronic carrier because during lamination it holds and protects the electronic element (the chip and associated antenna). I note that Leighton's technical expert did not contend in his report that the chip in Oberthur's cards infringes. Accordingly, he apparently believes that the chip in Oberthur's cards does not infringe because it is protected by a non-electronic carrier. For this reason, the Amex and Xenon cards do not contain the limitation in the asserted claims which requires "positioning said at least one electronic element in the absence of a non-electronic carrier."

24. Moreover, I also believe that the recess in Oberthur's cards is a non-electronic carrier based on my experience and knowledge. During lamination, the chip will enter the recess, which will protect it from being damaged by lamination pressures. I understand that the inventor of the Leighton Patents represented to third parties that a recess, such as that used in Oberthur's cards, is outside the scope of his invention. (Johnson Ex. 22.) I also understand that during development of the Amex card, Oberthur realized that it must punch a recess in the IR blocker layer in order to protect the chip. (Johnson Ex. 15, at OCS_A_039729.)

25. My opinion that the recess protects the electronic element in Oberthur's cards is also based on the results of two experiments, both of which I designed. In one experiment, we made Amex cards with and without a recess. In the other experiment, we made Xenon cards with and without a recess. Nicha Smith and Barry Mosteller, two employees at Oberthur's Exton facility, supervised the performance of these experiments, which are described in further detail below.

26. ***The Experiment On the Amex Cards.*** This experiment determined whether or not the electronic element in the Amex cards is protected by the hole in the IR blocker layer. In this experiment, we made 540 Amex cards. The cards we made had the same structure and manufacturing process as the commercial Amex cards that Oberthur normally manufactures.

However, 270 of the cards we made did not have a recess in the IR blocker layer. (*See* Exhibit B attached hereto.)

27. Before these cards were laminated, Oberthur tested the electronic elements in them to determine whether or not they worked. I understand that Oberthur regularly conducts such testing as part of its standard manufacturing process. The cards were all laminated at the same time and in the same lamination book. Following lamination of the sheet containing these cards, individual Amex cards were punched out of the sheets. We then tested each card to determine whether or not the electronic element in each of them worked.

28. The results showed that **100%** of the electronic elements in the Amex cards **with holes** worked before lamination. After lamination, **99%** (or 268 of 270) of the electronic elements in these cards worked. **99%** of the electronic elements in the Amex cards **without holes** worked before lamination. After lamination, only **14%** (or 39 of 270) of the electronic elements in these cards worked.

29. ***The Experiment On the Xenon Cards.*** I designed the second experiment to determine whether or not the electronic element in the Xenon card is protected by the recess in the top sheet during lamination. In this experiment, Smartrac prepared ten sheets of Xenon prelams. Each sheet contained thirty-six cards. The structure and manufacturing process of these prelams was identical to the prelams that Smartrac normally provides to Oberthur, except that five of these prelams did not have a recess in the top layer. (*See* Exhibit C attached hereto.)

30. Before these prelams were assembled, Smartrac tested the electronic elements therein to determine whether or not they worked. I understand that Smartrac normally conducts such testing as part of its manufacturing process. The results of Smartrac's testing indicate that **100%**

of the electronic elements in the Smartrac prelams **with holes** worked before lamination. After lamination, **97%** of the electronic elements in such cards worked. (*See id.*)

31. The results of Smartrac's testing indicate that **100%** of the electronic elements in the Smartrac prelams **without holes** worked before lamination. After lamination, **26%** of the electronic elements in such cards worked. (*See id.*) Oberthur received these prelams from Smartrac. Oberthur also tested these prelams to determine whether or not the electronic elements therein worked.

32. The results of Oberthur's testing indicate that **97%** of the electronic elements in the Smartrac prelams **with holes** worked after lamination. (*See id.*) The results of Oberthur's testing indicate that **26%** of the electronic elements in the Smartrac prelams **without holes** worked after lamination. (*See id.*) The following table sets forth all of the results from the testing on the Smartrac prelams:

Prelam made without protective holes				
Sheet #	**Smartrac**	**Smartrac**	**Exton**	**Exton**
(36 cards / sheet)	**Good**	**Bad**	**Good**	**Bad**
Sheet 1)	20	16	20	16
Sheet 2	0	36	0	36
Sheet 3	2	34	4	32
Sheet 4	1	35	0	36
Sheet 5	2	34	2	34
Prelam made with protective holes				
	Smartrac	**Smartrac**	**Exton**	**Exton**
	Good	**Bad**	**Good**	**Bad**
Sheet 1	34	2	36	0
Sheet 2	36	0	36	0
Sheet 3	35	1	36	0
Sheet 4	35	1	35	1
Sheet 5	36	0	36	0

Leighton Tech's Claim That a Protected Chip and an Unprotected Antenna Infringes Ignores the Disclosures of the Prior Art

33. Several prior art references disclose the use of a non-electronic carrier to protect an electronic element (a chip and associated antenna). The non-electronic carrier disclosed in these references, a recess, only protects the chip, and does not protect the antenna. The limitation in the claims of the Leighton Patents that a non-electronic carrier be absent "is the critical improvement of [the Leighton] patents over [the] prior art . . . which required protection for the electronic element during lamination." *Leighton*, 358 F. Supp. 2d at 369. If a card with a protected chip and an unprotected antenna infringes the claims of the Leighton Patents, as Leighton Tech contends, then those claims are invalid because the "critical improvement" of the claims would admittedly be present in the prior art.

34. Oberthur's cards have the same type of protective structure as that disclosed in the prior art. For example, U.S. Patent No. 5,880,934 (the "'934 patent") discloses a contactless card wherein the antenna "coil 7 is disposed on inner layer 11" that "has suitable opening 3 for receiving [chip] module 6." (Johnson Ex. 6, 3:58-60.) As shown below, just as in Oberthur's cards, the cards disclosed in the '934 patent have an opening (item 3, below) for the chip module (item 6):

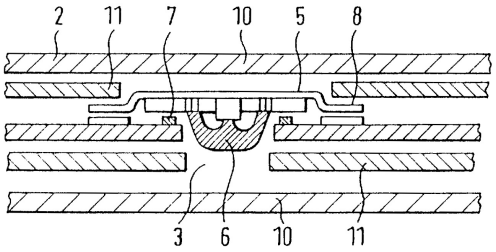


FIG. 4

This reference also discloses that the antenna coil (number 7 in the above figure) is located directly between two plastic sheets without any protection. The overall location of the antenna is depicted in Figure 3 of the '934 patent:

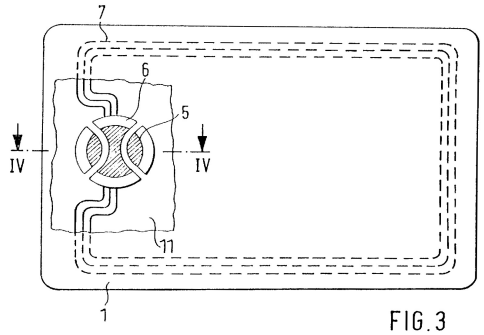


FIG.3

35. Similarly, International Patent Application Publication Number WO 88/08592 (the "'592 application") also discloses a laminated contactless card wherein the chip is protected by a recess. Specifically, it "contemplate[s] the existence of a hole [12] in a core layer [14] or at least in an opposing relatively thick layer [18] into which the circuit die [10, the micro-chip] is inserted":

FIG.1

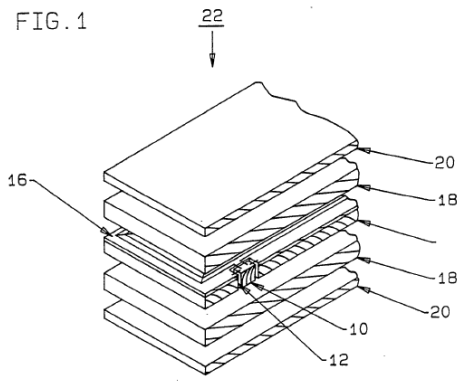
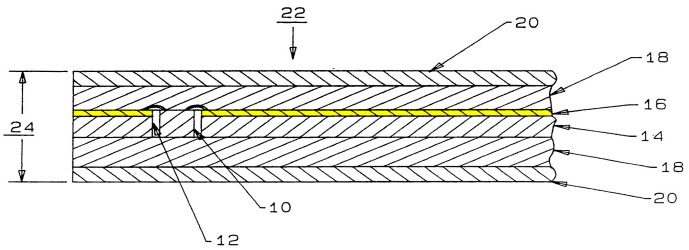


FIG.2



(Johnson Ex. 7, 24:6-9.) The '592 application also discloses that the antenna (item 16 in the figure) is placed directly between two plastic sheets (items 14 and 18) without any protection. (*See id.* at 14:24-15:13.) Accordingly, if the Leighton Patents cover Oberthur's protective structure, then they are invalid.

Even If Oberthur's Chip and Antenna Are Not One Electronic Element, Oberthur's Cards Still Do Not Infringe

36. Based on the fact that Oberthur's cards contain a non-electronic carrier to protect the electronic element, I understand that Leighton's technical expert contends that Oberthur still infringes because its cards contain other "electronic elements" which are not protected by non-

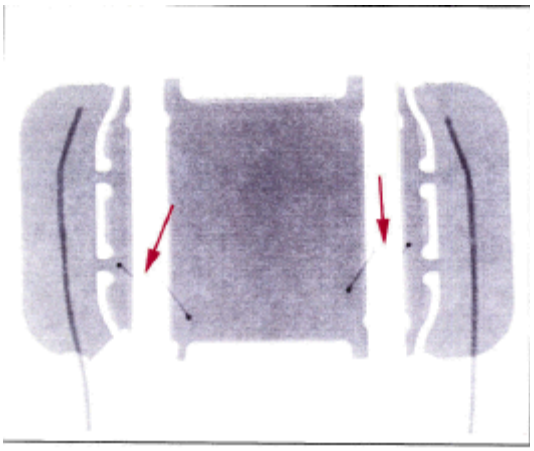
electronic carriers. It is my opinion that this infringement contention is unavailing for several reasons.

37. The recess protects both the chip and antenna. It is plain from the undisputed evidence, such as the figures above of the Oberthur cards, and the sample unlaminated Amex and Xenon cards and Xenon prelams, that the recess in Oberthur's cards actually protects both the chip and the antenna. Indeed, the antenna in the Amex card extends into the area directly below the recess. Therefore, the recess will protect the Amex antenna from damage during lamination.

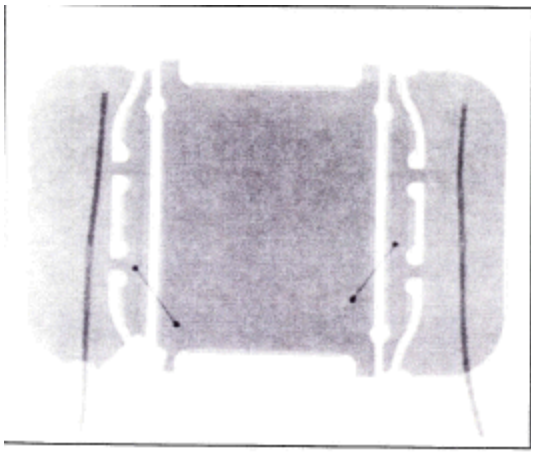
38. Moreover, the antenna in the Xenon prelams is also protected by the recess above the chip. As described above, Oberthur recently obtained two types of prelams from its current prelam supplier, Smartrac: prelams (i) with and (ii) without a recess in the plastic layer above the chip. Not surprisingly, as set forth above, the prelams without a recess had a very high failure rate as compared to the prelams with a recess.

39. I commissioned an outside laboratory to take pictures of the Xenon prelams provided to Oberthur using an x-ray machine. Consistent with the results above, the x-rays confirmed that the recess protects the chip and the antenna. Specifically, as shown in the sample x-rays below, the recess protects the connections between the chip (in the middle) and the antennas on either side of it, because the connections in the prelams without a recess were severed during lamination (as shown by the arrows):

Xenon Prelam Without Recess



Xenon Prelam With Recess



40. Based on my experience and knowledge, it is my further opinion that there is no need to separately protect the antenna, antenna bridge, and mounting pads that are used in Oberthur's accused cards. For example, the Amex antenna is a flat, solid strip of aluminum that, unlike the chip, contains no delicate circuitry.

41. Moreover, the Xenon antenna is also protected a non-electronic carrier. Before lamination of the prelams, the antenna is embedded into the inlay sheet by melting the inlay sheet. The embedding will protect the Xenon prelam from being damaged during lamination.

Oberthur's Cards Also Do Not Infringe Because The Electronic Element Therein Is Not Positioned "Directly Between" Two Plastic Sheets

42. All of the asserted claims also require that an electronic element be "position[ed] directly between said first and second plastic core sheets to form a core." The Court defined "directly" to mean "in immediate physical contact." Based on my knowledge and experience, it is my opinion that the electronic element in the Amex and Xenon cards is not positioned in immediate physical contact with two plastic core sheets to form a core. The Amex and Xenon cards therefore do not contain each and every limitation of the asserted claims. The top portion of the chip in the Amex and Xenon cards is not in immediate physical contact with any plastic layer. Instead, a buffer zone

of air exists above it. This is shown by the unlaminated Amex and Xenon cards attached to the Johnson Declaration.

43. Oberthur's Amex cards also do not infringe the "directly between" limitation for another reason. The top printed layer and the IR blocker layer in the Amex cards, which are located on either side of the inlay layer with the electronic element, each contain an adhesive layer that is .001 inches thick, located between these layers and the inlay layer. (Johnson Ex. 27, at 2-3.) Thus, with the exception of the top portion of the electronic element, which before lamination does not touch anything, the other portions of the electronic element in the Amex card would contact only the adhesive prior to lamination, and so could not be in immediate physical contact with the two plastic core sheets.

44. The chips in the Xenon cards are surrounded by an epoxy resin that fills the gaps created by the recesses in the top layer and in the inlay layer. (*Id.* at 6-7.) This epoxy prevents the electronic element in the Xenon cards from directly contacting the top and bottom overlaminate layers. For this additional reason, the Xenon cards also do not satisfy this claim limitation.

Oberthur's Cards Do Not Infringe Under the Doctrine of Equivalents

45. I understand that a product may also infringe the claims of a patent under what is known as the "doctrine of equivalents." I also understand that an accused product can only infringe under the doctrine of equivalents if it is "insubstantially different" from the claim limitation. I have been informed that one way to determine if an accused product is insubstantially different from a claim limitation is to apply the so-called "function-way-result" test; that is, if the product has a substantially different function than the claim limitation, performs that function in a substantially different way than the claim limitation, or achieves a substantially different result than the claim limitation, that product cannot infringe under the doctrine of equivalents.

46. As discussed above, the Leighton Patents contain two structural limitations that are not present in Oberthur's accused cards: the absence of a protective non-electronic carrier, and direct contact between the electronic element and two plastic core sheets. The accused cards contain a protective non-electronic carrier, which enables Oberthur to position its electronic element directly between two plastic sheets.

47. Based on this, it is my opinion that the accused cards contain a substantially different structure than the structure claimed in the Leighton Patents. The recess in Oberthur's accused cards performs an entirely different function than the absence of a recess required in the asserted claims -- it protects the electronic element. For this reason, the recess in Oberthur's cards protects the electronic element in an entirely different way, and obtains a different result, than the asserted claims, which require that such protection be absent.

48. It is my opinion that the structure of Oberthur's accused cards is the exact opposite of the structure required by the asserted claims. Oberthur's cards contain a recess to protect the electronic element. The recess prevents the electronic element from directly touching the plastic sheets which surround it. The asserted claims, by contrast, require that such protection be absent, and that the electronic element directly touch the surrounding plastic sheets.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge, information and belief.

January 5, 2007

Dr. David O. Kazmer